

Delta Smelt

Bennett: Dry spring + Export timing post-ESA → poor selection → weak spawners → decrease in FMWT

Pete Smith: Some dry years → very high entrainment → reduction in STN&FMWT
Entrainment extending to lower San Joaquin ↔ dispersion/tidal trapping

Guerin: Total basin precipitation (post-clam) → following year STN

Fall salinity (post-clam) → following STN (high salinity, low STN)

Salinity → clam density (high salinity, high clam count)

fall, winter, spring clam density (post-clam) → FMWT (high clams, low FMWT)

Gartrell/Denton: fall salinity regime change *circa* 1990

Fullerton *et al.*: fall runoff decline ← salmon flows, increased use, rice flooding and hydrologic shift

Miller and Mongan: food X STN → FMWT

Sommer: fall salinity → fall habitat quality → FMWT

Many: overbite clam/food impacts

Delta Smelt, Summary

poor runoff → poor water quality

poor water quality + export timing → poor selection → reduced FMWT

poor water quality + exports (some years) → high entrainment → reduced FMWT

poor fall water quality → (high clams, poor habitat conditions) → reduced FMWT

poor food X STN → reduced FMWT

Delta Smelt

Bad scenarios

poor water quality+ poorly timed exports → poorly selected fish and low numbers of spawners

poor water quality→ high clam density (potential for low food)

poor water quality→poor habitat conditions, high clams in fall, reduced habitat in fall → stress on developing fall spawners

1976, 1977, 1987-1994 (severe drought), 1995-present (export timing), 2000-2004 dry years

Good scenarios:

high runoff → high water quality → none of the related factors

1970's, 1995-1999, 2006

To Do list

- **Reduce entrainment potential from Lower San Joaquin River with the Frank's Tract project (False River Barrier to reduce dispersion/tidal trapping of Lower SJR fish)**
- **Move the export reduction period (like it was supposed to be in the 1994 Accord)**
- **Build the fish screens called for in the ROD**
- **Test water quality effect in fall (EWA)**
- **Model tests first to ensure that the field measurements can discern the “hoped for” effects**